

CIGUATERA FISH POISONING

What is ciguatera fish poisoning?

Ciguatera fish poisoning occurs when humans eat contaminated tropical reef fish. Common nonspecific symptoms include nausea, vomiting, diarrhea, cramps, excessive sweating, headache, and muscle aches. There are no specific diagnostic tests for ciguatera fish poisoning in humans, and diagnosis is generally made based on symptoms and recent dietary history.

What are the symptoms of ciguatera fish poisoning?

Ciguatera fish poisoning usually involves a combination of gastrointestinal, neurological, and cardiovascular disorders. Symptoms can vary with the geographic origin of toxic fish. Gastrointestinal symptoms such as diarrhea, vomiting, and abdominal pain occur first, usually within 24 hours of eating implicated fish. Neurologic symptoms may occur at the same time or may follow 1-2 days later, and include pain and weakness in the lower extremities and circumoral and peripheral paresthesias. Other frequent symptoms include temperature reversal (e.g., hot food tastes cold, cold food tastes hot) and “aching teeth.”

Most patients recover completely within a few weeks, but severe cases may progress to coma and respiratory arrest within the first 24 hours of illness, while other patients may have intermittent reoccurrence of symptoms over a period of months to years.

How do people get ciguatera fish poisoning?

Microscopic sea plants called dinoflagellates produce ciguatoxins. These toxins become progressively concentrated as they move up the food chain from small herbivorous fish to the larger fish that eat them, and reach particularly high concentrations in large predatory tropical reef fish. Implicated fish typically are large subtropical and tropical finfish, such as king mackerel; barracuda; black and yellowfin grouper; blackfin, cubera, and dog snapper; greater amberjack; hogfish; and horse-eye jack. These fish are typically caught by sport fishermen on reefs in Hawaii, Guam, and other South Pacific islands, the Virgin Islands, and Puerto Rico. The occurrence of toxic fish is sporadic, and not all fish of a given species or from a given locality will be toxic. All humans are believed to be susceptible to ciguatera toxins.

How is ciguatera fish poisoning treated?

Ciguatera has no cure, but symptoms usually go away in days or weeks. In some instances, symptoms can last for years. People who have ciguatera may be treated supportively for their symptoms. Intravenous mannitol (1 g/kg of a 20% solution over 30 minutes) may dramatically reduce the severity and duration of neurologic symptoms, particularly if administered within the first 24 hours of poisoning. However, mannitol should be used with caution and only after ensuring adequate hydration.

People who are recuperating from ciguatera fish poisoning should avoid reef fish, fish sauces, shellfish, alcoholic beverages, and nuts and nut oils for 1-3 months following illness, because these foods may provoke recurrent symptoms.

How common is ciguatera fish poisoning?

Ciguatera fish poisoning is reportable in California, but it is probably underreported because of the generally non-fatal nature and short duration of disease. The disease is more common in areas where contaminated fish are caught, such as Hawaii, which had 20-57 cases reported annually in the years 1996-2000. Whereas in 1999 and 2000, California only had three and two cases of ciguatera reported, respectively.

What can a person do to prevent ciguatera fish poisoning?

People should avoid consuming large predatory reef fish (greater than 6 lbs) and known high-risk fish. Because certain anatomic parts of the fish tend to concentrate more toxin (i.e., head, gut, roe, and liver), the viscera and heads of reef fishes should not be consumed or used in fish soup.

Ciguatoxins cannot be detected by sight, taste or smell and cannot be destroyed by cooking or freezing. Please seek medical care if you suspect you have ciguatera fish poisoning.

What is the health department doing about ciguatera fish poisoning?

Ciguatera fish poisoning is reportable in California. The California Department of Health Services and local health departments are available to health providers for consultation on ciguatera fish poisoning. Public health agencies will investigate cases of ciguatera fish poisoning and will traceback any implicated fish to remove it from the market.

Where can I get more information on ciguatera fish poisoning?

Several other public health agencies have posted resources on ciguatera fish poisoning to the internet. These include:

CDC's ciguatera fact sheet: <http://www.cdc.gov/nceh/ciguatera/default.htm>

FDA's ciguatera fact sheet: <http://www.cfsan.fda.gov/~mow/chap36.html>

Health Canada's ciguatera fact sheet:
http://www.hc-sc.gc.ca/pphb-dgspsp/tmp-pmv/2002/ciguatera_e.html